HYCQ5-63 Automatic Transfer Switches

Featurse

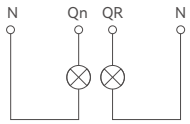
- HYCQ5-63 series of automatic transfer switch is composed of small circuit breaker stand - alone operating mechanism , control circuit , etc . All components are installed on the same base plate . Te control power supply voltage of the automatic transfer switch is AC230V, and the mechanical life is 5000 times .
- HYCQ5-63 series of automatic controller (only capable of self - switching and self - recovery) simultaneously detects the phase voltage (automatic control power supply) of two power supplies (referred to as normal power supply and backup power supply) at the same time . When the normal power supply is abnormal , the small circuit breaker When there is voltage loss or phase loss in the A phase of the power supply , the automatic controller makes the device switch to the backup power supply without delay ; when the normal power supply returns to normal , the automatic controller makes the device return to the normal power supply without delay . Two power sources are abnormal at the same time .

HYCQ5-63 DZ47 Type Automatic Transfer Switches

Model description

HYCQ 5 □ - □ / □

- Pole number
- Circuit breaker frame class
- Function code: M, G, H
- Design code
- Enterprise automatic transfer switch code



HYCQ5-63G

Normal Working Conditions

- Ambient air temperature range: -5 ℃ to +40 ℃ ;
- Altitude: the altitude of the installation site shall not exceed 2000m;
- Atmospheric conditions: When the maximum temperature is +40° C, the relative humidity of the air does not exceed 50%, and a higher relative humidity is allowed at lower temperatures.Temperature, for example, 90% at 20° C, special measures should be taken for condensation caused by temperature changes;
- Pollution level: 3;
- Electrical level: CB level.

HYCQ5-63H

Structure and performance

- Structure

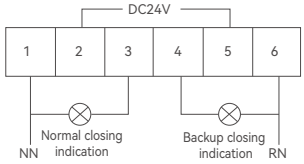
HYCQ5-63 series of automatic transfer switch is composed of small circuit breaker stand - alone operating mechanism , control circuit , etc . All components are installed on the same floor . The control power supply voltage of the automatic transfer switch is AC230V, and the mechanical life is 5000 times .

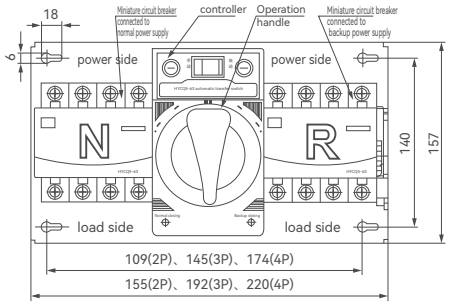
- Performance

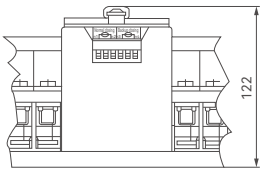
HYCQ5-63 automatic controller (only capable of self - switching and self - recovery) simultaneously detects the phase voltage (automatic control power supply) of two power supplies (referred to as common power supply and backup power supply), when the common power supply is abnormal , that is , a small circuit breaker When the A - phase of the A - phase loses voltage or lacks phase elbow , the automatic controller makes the device switch to the standby power supply without delay ; when the common power supply returns to normal , the automatic controller makes the device return to the common power supply without delay . Two power sources are abnormal at the same time .

Shape and installation dimensions

Fire control type wiring diagram







HYCQ5-63G

HYCQ5 Series Automatic Transfer Switches

Model description

HYCQ 5 □ - □ / □

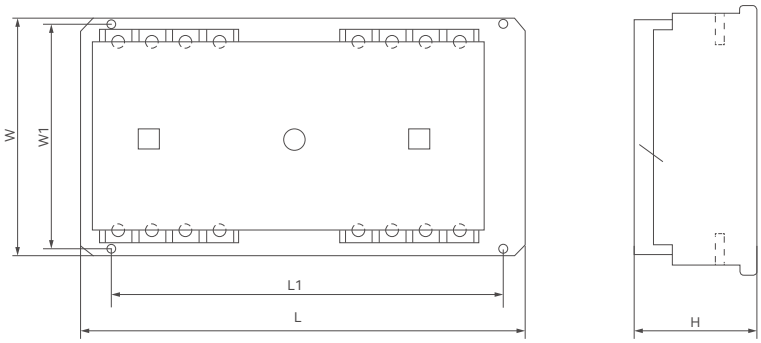
- Pole number
- Frame class rated current
- Economical M, Intelligent E
- Design code
- Enterprise code of automatic transfer switch

The main technical parameters

- The operating voltage of the switch controller is AC220V;
- The mechanical life of the switch (N-R-N cycle) is 5000 times;
- The minimum transfer time is 1.5~4S;
- The switch has the functions of loss of voltage, undervoltage, overvoltage, phase failure, delay, fire-fighting of the starting oil engine, automatic switching without automatic recovery, backup priority, and switching;
- The switch carries the operating handle at any time and is used as an emergency manual operation switch. (for use in case of power failure);
- There are three stable working states:
  state I: normal power supply closed, backup power supply closed,
  state II: normal power supply divided, backup power supply closed;
  Status III : normal power points, backup power points.

Shape and installation dimensions

Note : Split controler instalation openings
Size: 108x89mm



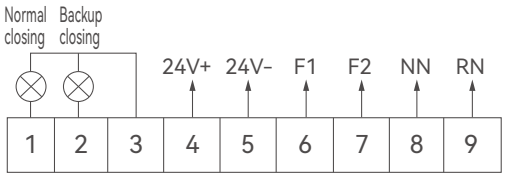
Model \ size	L		L1		W		W1		H
	3P	4P	3P	4P	3P	4P	3P	4P	
HYCQ5-125	342	375	260	290	215	215	198	198	111
HYCQ5-250	385	420	298	335	228	228	208	208	132
HYCQ5-400	508	556	437	485	333	333	307	307	174
HYCQ5-630	618	676	543	600	348	348	324	324	191
HYCQ5-800	670	728	602	658	350	350	320	320	190
HYCQ5-1250	710	780	680	740	370	370	340	340	225

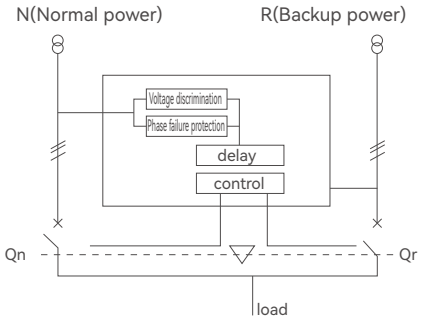
Note: Installation dimensions: 108mm×89mm。

Main structure and working principle

- In the structure diagram, N is the normal power supply, and R is the backup power supply. Qn is the normal power control circuit breaker, Qr is the backup power control circuit breaker, and the two circuit breakers have double protection of mechanical interlocking and electrical interlocking. The controller consists of four parts: voltage identification, phase failure protection, time delay and controller. The incoming terminal of the backup power supply is commonly used for voltage identification and phase failure protection sampling. When the normal power supply is normal and the switch works in automatic gear, no matter whether Qr is in the "on" or "off" state, first complete the Qr split and Qn close procedure to ensure that the normal power supply is connected to the load. When the normal power supply returns to normal, the load Swap back to normal power.
- Switch-controlled circuit breakers can be composed of 3-pole or 4-pole molded case circuit breakers. The switch can be operated automatically and manually, and can realize automatic and forced load switching between two power sources. According to the user's requirements, the normal power supply indication and the backup power supply indication are connected from the external terminal and led to the control panel. For automatic switching and non-automatic reset specifications, the reset button can also be led out from the external terminal.
- This series of automatic switching switches is simple to plot, and there is no need to draw a secondary connection coil, which greatly facilitates engineering design. If the user needs to connect the power supply indication and the circuit breaker closing indication on the screen, it can be stated in the order contract. The external wiring diagram is shown in the figure (the indicator light can adopt AD11 AC220V specification).

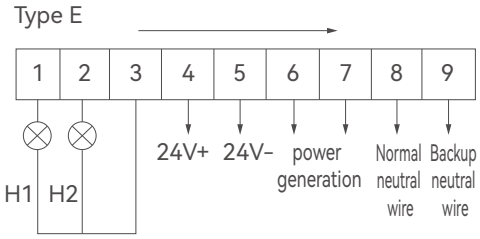
Type B



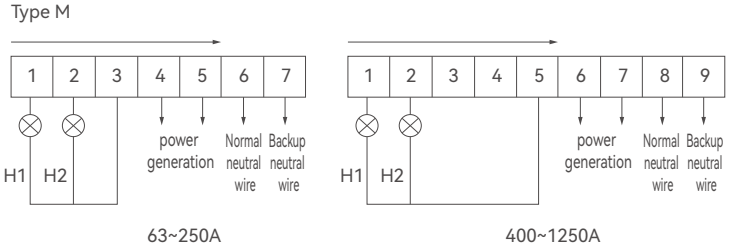


Structure diagram

Type E



Type M



In the picture:
(1) H1 and H2 are the external indications of normal closing and backup closing;
(2) 4 and 5 are 24V fire protection and two ways opening;
(3) 6 and 7 are grid --- generator start contacts;
(4) 8 is the neutral line of the normal power supply (three poles), and 9 is the neutral line of the spare power supply (three poles).

In the picture:
(1)H1 and H2 are the external indications of normal closing and backup closing;
(2) 6 and 7 are grid --- generator start contacts;
(3) 8 is the neutral line (three-pole) of the normal power supply, and 9 is the neutral line (three-pole) of the spare power supply.

Illustration (HYCQ5)

- This series of dual power transfer switches have "manual" state, switch between normal power supply and backup power supply and push-button, "automatic" state, automatic conversion between normal power supply and backup power supply, and have "automatic", "manual", "automatic" normal undervoltage", "normal overvoltage", "normal closing", "normal trip", "backup undervoltage", "backup overvoltage", "backup closing", "backup trip" text display.
- When the normal power supply and the backup power supply supply power at the same time, if the normal power supply voltage is higher than 120% of the rated voltage or lower than 70% of the rated voltage, it will automatically switch to the backup power supply, and display "normal overvoltage" or "backup undervoltage" .
- When the normal power supply and the backup power supply supply power at the same time, if the backup power supply voltage is higher than 120% of the rated voltage or lower than 70% of the rated voltage, it will automatically switch to the normal power supply, and display "backup overvoltage" or "backup undervoltage" .
- In the normal power supply, if the load is overloaded or short-circuited, the circuit breaker will trip and display "normal trip".
- In the backup power supply, if the load is overloaded or short-circuited, the circuit breaker will trip and display "backup trip".

Key operation instructions (HYCQ5)

- Press the automatic button for 1-3 seconds in manual mode to switch to automatic; press the manual button for 1-3 seconds in automatic mode to switch to manual mode.
- Press the "two ways opening" button for 1-3 seconds to convert the automatic transfer switch into two ways disconnection.
- In the manual state, press the "normal" key for 1-3 seconds to convert the automatic transfer switch to the usual state. It is displayed as "manual, normal closing"; press the "backup" button for 1-3 seconds to convert the automatic transfer switch to the backup state. Displayed as "manual, backup close".
- In the automatic state, when both the normal power supply and the backup power supply are normal, the normal power supply priority is displayed as "automatic normal closing", if the normal power supply fails, the automatic transfer switch will be automatically converted to the backup power supply and displayed as "automatic backup closing", When the normal power supply returns to normal, the automatic transfer switch will be automatically converted to the normal power supply and displayed as "automatic normal closing"; press "normal" for 5 seconds to switch the normal priority;
  Press "backup" for 5 seconds to switch the backup priority; when using, press "normal" + "two way opening" to set the automatic switching and automatic recovery;
- Press "Backup" + "two ways opening" at the same time to set auto-casting without auto-recovery.
- Delay time: The delay time is adjusted by the potentiometer, between 0-30 seconds. Fire protection function: fire 24V signal, immediately two ways opening, and set the
- switch to manual, and prohibit all operations before 24V disappears.

Note: If both normal and backup are abnormal, it will automatically switch to two ways opening state in automatic state. If a certain channel returns to normal, it will automatically restore normal power supply.

Intelligent automatic controler control function annotation

- Self-switching and self-recovery is suitable for normal power supply and backup power supply. The intelligent automatic controller automatically converts the two power supplies (that is, normal power supply and backup power supply). In normal state, it is powered by normal power supply. When the normal power supply fails or is abnormal (any one When overvoltage, undervoltage, voltage loss or phase loss occurs in the group voltage, the set (adjustable) delay time will automatically switch to the backup power supply; when the normal power supply returns to normal, the set (adjustable) delay time) the delay time automatically returns to the normal power supply.
- Self-switching non-self-recovery is suitable for normal power supply and backup power supply. The automatic controller with self-switching non-self-recovery can perform automatic conversion with two power sources (that is, normal power supply and backup power supply). When any power supply is abnormal (voltage, undervoltage or phase loss occurs in any group of voltages). The time delay that has been set is automatically switched to another normal power supply, but when the abnormal power supply returns to normal, it cannot be automatically restored.
- When the power grid and the oil generator are used in the power generation system, the automatic controller automatically converts the two power sources of the power grid and the power generation. When the grid voltage is lower than 85% of the rated voltage, a power generation command is issued (with a set of normally open and normally closed contacts). output), when the generation voltage reaches 85% of the rated voltage, first disconnect the load circuit from the grid, and then turn on the generation power after a delay. When the power grid returns to normal (over 85% of the rated voltage), the intelligent controller logically determines that the load circuit is automatically disconnected from the power generation source and switched to the power grid.

working status

The current power supply of the load		The current preset state of the system				current power supply	System processing when power supply fails				Treatment of the system when the reserve power supplies power normally,while the normal power is regular too.	
		manual		automatic		Failure of another group of power supply is normal	do not switch	switch to				
normal	backup	normal	backup	normal	backup			normal	backup	dual use	do not switch	switch to
●		●				normal	●				●	
						unusual	●					
●				●		normal			●			normal
						unusual				●		
●					●	normal			●		●	
						unusual				●		
	●		●			normal	●				●	
						unusual	●					
	●			●		normal		●				normal
						unusual				●		
	●				●	normal		●			●	
						unusual				●		

Fault maintenance

- There is no response after the power is turned on, and the electric operating mechanism does not move after pressing the command button. Please check the power connection of the circuit breaker and the connection of the special cable.
- After the power is turned on, although the voltage of each phase is normal, but the panel shows that the voltage is undervoltage, please check whether the power supply of the circuit breaker is connected well and whether there is a phase loss phenomenon.

Notices

- The intelligent system should be regularly checked and maintained according to the requirements of the selected circuit breaker and electric operating mechanism. The intelligent controller is maintenance-free under normal use conditions.
- Long-term use of this intelligent system should pay attention to moisture-proof and dust-proof, and the above-mentioned contents should be debugged before use before it can be put into operation.